

KLESNCHIEV, V.V. [Klieshchov, V.V.] (Kiyev)

Study of economic systems using physical analogs. *Avtomatika* 7  
no.6:20-29 '62. (MIRA 16:1)

(Economics, Mathematical)

IVAKHNENKO, A.G. [Ivakhnenko, O.H.]; KLESHCHEV, V.V. [Klieshchov, V.V.];  
OTKHMEZURI, G.L. [Otkhmezuri, H.L.]; SHLEZINGER, M.I.

Fundamental work in the theory of perceptrons; a review of  
"Principles of neurodynamics", a book by F. Rosenblatt. Avtomatyka  
8 no.3:84-90 '63. (MIRA 16:7)  
(Perceptrons) (Cybernetics) (Rosenblatt, F.)

KLESHEV, V.V. [Klieshohov, V.V.] (Kiyev); CHEKALIN, V.G. [Chekalin, V.H.]  
(Kiyev)

Comparative estimation of the volumes of one-layer and multilayer  
recognition systems. Avtomatyka 8 no.4:45-49 '63. (MIRA 16:10)

KLESHCHEV, V.V. [Kleshchov, V.V.]

Instruction and research in the field of cybernetics at the  
University of Wisconsin in the U.S.A. Avtomatyka 8 no.4:81-84  
'63. (MIRA 16:10)

KLESHCHEV, V.V. [Klieshehov, V.V.]

Practical utilization of program evaluation and review techniques. Avtomatyka 9 no.3:61-66 '64 (MIRA 17:7)

**KLESHCHEV, V.V. [Klieshchev, V.V.]**

Computer models of the economy. Avtomatyka 9 no.4:73-74 '64.  
(MIRA 17:8)

IVAKHNENKO, A.G.; KLESHCHEV, V.V.; OTKHOZURY, G.L.; SHLIZINGER, M.I.

First monograph on the theory of perceptrons (review of F. Rosenblatt's book "Principles of neurodynamics.") Avtom. upr. i vych. tekhn. no.6:332-349 '64. (MIRA 17:10)

KLESHCHEV, V.V. (Klieshchov, V.V.)

Acceptance of alternative solutions by means of the PERT procedure.  
Avtomatyka 10 no.3:90-93 '65. (MIRA 18:7)



KLESHCHEV, V.V. [Kleshchov, V.V.]

Analysis of automatic control systems using signal flow graphs;  
graphical method. Avtomatika 10 no.4:87-92 '65.

(MIRA 18:10)

3-8-28/34

KLESHCHEVA, G.V.

AUTHOR:

Tulayeva, A.G., Dotsent, Candidate of Chemical Sciences  
Kleshcheva, G.V., Kus'mina, V.P.

TITLE:

A Textbook Required by Future Teachers (Uchebnik, nuzhnyy budushchim uchitelyam)

PERIODICAL:

Vestnik Vysshey Shkoly, 1957, # 8, pp 87-89 (USSR)

ABSTRACT:

The article is a review of a textbook "Foundations of Physical and Colloidal Chemistry" (Osnovy fizicheskoy i kolloidnoy khimii) by S.A. Balezin and G.S. Parfenov, approved by the RSFSR Ministry of Education for use at pedagogic institutes. It is pointed out that there was an actual need for such a textbook and that it was warmly welcomed. More than 6 months have since passed, and there is no doubt that the book has greatly assisted students in mastering the complicated physico-chemical regularities. Students have made better progress this year, and their knowledge has greatly increased. The article enumerates a few deficiencies and mistakes but points out that they do not lessen the general value of the book. The article contains 1 Russian reference.

Card 1/2

A Textbook Required by Future Teachers

3-8-28/34

· ASSOCIATION: Penzenskiy pedagogicheskiy institut (Penza Pedagogical Institute)

AVAILABLE: Library of Congress

Card 2/2

25079

S/081/61/000/010/012/029

B117/B206

18 8310

AUTHORS: Balozin, S. A., Kleshcheva, O. V.

TITLE: Phosphates of some amines as corrosion inhibitors for steel-20 in water

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 10, 1961, 100, abstract 101226 (101226). ("Uch. zap./ Mosk. gos. ped. in-ta im. V. I. Lenina", no. 146, 1960, 92 - 101)

TEXT: It was established that among monoethanolamine phosphates, tri-substituted monoethanolamine phosphate (0.01 moles/l) has the greatest protective effect as corrosion inhibitor for steel-20 in tap- and distilled water. Disubstituted phosphate (0.04 moles/l) has a lower protective effect, and monosubstituted monoethanolamine phosphate a still lower one. [Abstracter's note: Complete translation.]

Card 1/1

BALEZIN, S.A.; KLESHCHEVA, G.V.

Phosphates of certain amines as inhibitors of steel-20 corrosion  
in water. Ush. zap. MGPI no.146:92-101 '60, (MIRA 15:4)  
(Amino compounds) (Phosphates)  
(Steel—Corrosion)

CURVICH, D.B.; KLESHCHENVA, M.S.

Potentiometric analysis of sulfuric and perchloric acids in  
acetylating mixtures. Plast.massy no.8:61-62 '60. (MIRA 13:10)  
(Sulfuric acid) (Perchloric acid) (Acetylation)

BALANDINA, V.A.; ~~KLESHCHEVA, M.S.~~; KUZNETSOVA, G.S.

Determination of the composition of a mixture of acetaldehyde,  
methanol, and vinyl acetate with the aid of gas-liquid partition  
chromatography. Plast.massy no. 7461-62 '63. (MIRA 16:8)  
(Acetaldehyde) (Vinyl acetate) (Gas chromatography)

**BALANDINA, V.A.; DEMENT'IKVA, M.I.; KLESHCHEVA, M.S.; TURKOVA, L.D.**

Determination of the composition of crude vinyl acetate derived from  
carbide acetylene. Plast.massy no.4:64-65 '63. (MIRA 1614)  
(Vinyl acetate) (Acetylene)



BALANDINA, V.A.; KLESHCHEVA, M.S.; KUZNETSOVA, G.S.; TURKOVA, L.D.

Quantitative evaluation of chromatograms with the aid of a  
detector of heat conductivity. Zhur.anal.khim. 18 no.7:808-  
810 J1 '63. (MIRA 16:11)

1. Scientific-Research Institute of Polymerization Plastics  
and Experimental Plant, Leningrad.

KLESHCHINA, Ye.P. (Moscow).

Problems as a method of teaching basic chemical concepts in the 7th class.  
Khim.v shkole no.5:42-45 8-0 '53. (MLRA 6:9)

(Chemistry--Study and teaching)

KLESHCHEVA, Ye. P.

SHAPOVALENKO, S.O.; NIKHTEIN, D.S.; TSVETKOV, L.A.; OLORISOV, P.A.;  
KLESHCHEVA, Ye. P., redaktor; MAKHOVA, N.N., tekhnicheskii redaktor.

[Problems of training in practical applications in the teaching  
of chemistry] Voprosy politekhnicheskogo obucheniia v prepodavanii  
khimii. Moskva, Gos. uchebno-pedagog. izd-vo, 1954. 157 p. (MLRA 718)  
(Chemistry--Study and teaching)

PAVLOV, B.A.; SOLOV'YENVA, A.S.; LUK'YANOV, P.M., professor, redaktor;  
KLESHCHENVA, Ye.P., redaktor; SHIKIN, S.T., tekhnicheskii redaktor

[Technology of inorganic materials] Tekhnologiya neorganicheskikh  
veshchestv. Pod red. P.M.Luk'ianova. Moskva, Gos. uchebno-pedagog.  
izd-vo Ministerstva prosveshcheniya RSFSR, 1954. 174 p. (MLRA 7:8)  
(Chemicals--Industry)

KLESHCHENVA, Ya. P.; TETERNIN, M.L. (Moskva).

Exhibition of school equipment and teaching materials. Khim. v  
shkole 11 no.6:75-76 N-D '56. (MLBA 9:12)  
(Chemical laboratories)

*KLESHCHEVA Ye. P.*  
KPSHTYN, D.A.; KLESHCHENVA, Ye. P.

Conducting an elective course in chemical technology in a secondary  
school. Politekh. obuch. no. 4:17-23 Ap '58. (MIRA 11:3)  
(Chemistry, Technical)

KLESECHNEVA, Yelena Pavlovna; GORSHKOVA, Yekaterina Alekseyevna; PUCHKOVA,  
Nina Ivanovna; GRACHEV, A.P., red.; LAUT, V.G., tekhn.red.

[Methods of teaching the subjects of oxides, bases, acids, and  
salts] Metodika izucheniia okislov, osnovanii, kislot i solei.  
Moskva, Izd-vo Akad.pedagog.nauk RSFSR, 1960. 102 p.

(MIRA 13:10)

(Chemistry--Study and teaching)

**KLESHCHEVA, Ye.P.; ZHUKOVSKAYA, V.S.**

Connection between a course on chemistry and instruction at a  
plant. Khim. v shkole 15 no.3:29-35 My-Je '60. (MIRA 14:7)  
(Education, Cooperative) (Chemistry—Study and teaching)



GLORIOZOV, Pavel Aleksandrovich; KLESHCHEVA, Yelena Pavlovna, starshiy nauchnyy sotr.; SHAPOSHNIKOVA, A.A., red.; NOVOSELOVA, V.V., tekhn. red.

[Methodology of teaching chemistry in eight-year schools; the seventh grade] Metodika prepodavaniia khimii v vos'miletnei shkole; VII klass. Moskva, Izd-vo Akad. pedagog.nauk RSFSR, 1961. 199 p. (MIRA 15:7)

1. Chlen-korrespondent Akademii pedagogicheskikh nauk RSFSR (for Gloriov).  
(Chemistry—Study and teaching)

KLESHCHEVA, Ye.P.

Teaching chemistry in schools of Czechoslovakia. Khim. v shkole  
17 no.2:83-87 Apr '62. (MIRA 15:3)  
(Czechoslovakia—Chemistry—Study and teaching)

SAVICH, T.Z.; KLESHCHEVA, Ya.P.

Contact between the teaching of chemistry in eight-year schools  
and life. Khim. v shkole 17 no.5:33-41 8-0 '62. (MIRA 15:9)  
(Chemistry—Study and teaching)

KLESHCHEVA, Z. A., Cand Med Sci (diss) -- "The effectiveness of the combined effect of certain insecticidal and bactericidal preparations under experimental conditions". Perm', 1960. 17 pp (Perm' State Med Inst), 150 copies (KL, No 15, 1960, 139)

KLESHCHEVICH, N.F., [deceased]; ZARETSKAYA, A.D.

Solar heating of seeds reduces disease incidence in wheat.  
Zashch. rast. ot vred. i bol. 5 no.9:25 8 '60. (MIRA 15:6)  
(Wheat—Diseases and pests)  
(Solar heating)

KLESHCHEVICH, V.A.

Small machinery for the construction of pipelines. Stroi.  
trudoprov. 8 no.6:7-9 Je '63. (MIRA 16:7)

1. Starshiy inzh.-konstruktor spetsial'nogo konstruktorskogo  
byuro "Gazstroy Mashina".  
(Pipelines--Design and construction)

AUTHOR: Kleshchevnikov, A.

SOV/130-52-7-20/35

TITLE: A Vocation (Prizvaniye)

PERIODICAL: Metallurg, 1958, nr 7, p 36 (USSR)

ABSTRACT: This is a biographical sketch of Luk'yan Viktorovich Silitskiy, who worked on the construction of the Kuznetsk Metallurgical Combine and stayed on as a blast-furnace worker. He showed great ability and is now senior furnaceman. Among the measures which he has been instrumental in securing are an improved runner-making procedure and the adoption of a clay-lined runner slag trap. There is 1 figure.

ASSOCIATION: Kuznetskiy metallurgicheskiy kombinat  
(Kuznetsk Metallurgical Combine)

Card 1/1 1. Steel industry--USSR 2. Personnel--USSR

L 33604-66 ENT(=)/T/EWP(t)/ETI IJP(c) RDM/JD

ACC NR: AR6016227

SOURCE CODE: UR/0058/65/000/011/E054/E054

AUTHORS: Inyutkin, A. I.; Kleshchinskiy, L. I.

TITLE: X ray diffraction determination of the characteristic temperature and the period of the crystal lattice of mercury telluride

SOURCE: Ref. zh. Fizika, Abs. 11E412

REF SOURCE: Sb. Fizika. Dokl. k XXIII Nauchn. konferentsii Leningr. inzh.-stroit. in-ta, L., 1965, 27-29

TOPIC TAGS: mercury compound, telluride, x ray diffraction study, crystal lattice parameter, temperature dependence

ABSTRACT: Results are presented of x-ray diffraction measurements of the characteristic temperature ( $\theta$ ) and the lattice period of HgTe produced with excess Hg (up to 25%). The dependence of  $\theta$  on the percentage of excess mercury has a maximum lying between 10 and 15%. The lattice constant does not depend on the excess-mercury content for all practical purposes. [Translation of abstract]

SUB CODE: 20

Cord 1/1 82



*KLESHCHEVNIKOVA, S.I.*

**AUTHOR:** Kleshchevnikova, S.I., Pokrovskiy, Ya.Ye. 57-8-1/36  
Rumyantseva, Ye.I.

**TITLE:** Preparation of Pure Si by the Thermal Decomposition of Silane (Polucheniye chistogo kremniya termicheskim razlozheniyem silana)

**PERIODICAL:** Zhurnal Tekhn. Fiz., 1957, Vol. 27, Nr 8, pp. 1645-1648 (USSR)

**ABSTRACT:** The method as well as the apparatus are described, Monosilane was produced by means of the disproportionation of triethoxysilane in presence of metallic sodium and was subjected to thermal decomposition after a simplest kind of purification. The decomposition was carried out on a tantalum band which was heated with current to 950°. The bark of polycrystalline Si forming on this occasion can be separated from tantalum in form of a bar. The bar can be used for a zonal recrystallization. The monocrystals obtained after a zonal melting of the Si bars without crucibles have a specific electric resistance of up to 50 Ohm per cm and a life of the electrons not in equilibrium of up to 300  $\mu$ sec. There are 2 figures and 2 Slavic references.

**ASSOCIATION:** Moscow State University im. M.V.Lomonosov (Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova)

**AVAILABLE:** Library of Congress  
Card 1/1

POKROVSKIY, Ya.Ye.; KLESECHENNIKOVA, S.I.; RUMYANTSEVA, Ye.I.

Some improvements in the production of pure silicon by the thermal decomposition of silane. Fiz. tver. tela 1 no.6:999-1001 Je '59.  
(MIRA 12:10)

1. Moskovskiy gosudarstvennyy universitet, Fizicheskiy fakul'tet.  
(Silicon) (Silane)

S/193/62/000/009/001/002  
A004/A101

**AUTHORS:** Reybakh, M. S., Tsirlin, A. M., Kleshchevnikova, S. I., Volkov, V. L.,  
Matveyev, B. I., Kazakova, N. V.

**TITLE:** Film-type apparatus for the continuous triethoxysilane synthesis

**PERIODICAL:** Byulleten' tekhniko-ekonomicheskoy informatsii, no. 9, 1962, 21 - 23

**TEXT:** This new apparatus for the continuous triethoxysilane synthesis, in which the reaction and desorption zones are separated, has been developed by an organization of the Gosudarstvenny komitet po khimii (State Committee on Chemistry) at the Council of Ministers of the USSR. The apparatus is a film-type mass-exchange column, whose design and operation are described. A table gives comparative data on the triethoxysilane synthesis in film-type and bubbler apparatus. The raw material consumption in the former is only half of the latter, while the output of the film-type apparatus is by 25% higher than that of the bubbler type. Comparing the technical and design data of the continuous film-type apparatus with those of the periodic bubbler apparatus, it is shown that the working volume and hydraulic resistance of the film-type apparatus are considerably lower than

Card 1/2

S/193/62/000/009/001/002  
A004/A101

Film-type apparatus for the...

those of the bubbler apparatus, while the specific surface of heat exchange and the specific surface of phase contact are many times larger (345 and 130 times respectively), which ensures a sharp reduction in desorption time. There are 1 figure and 2 tables.

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Card 2/2

S/191/62/000/012/007/015  
B101/B186

**AUTHORS:** Volkov, V. L., Kafyrov, M. I., Kleshchevnikova, S. I.,  
Rumyantseva, Ye. I.

**TITLE:** Synthesis of triethoxy silane

**PERIODICAL:** Plasticheskiye massy, no. 12, 1962, 28-29

**TEXT:** Triethoxy silane is synthesized by bringing trichlorosilane into reaction with ethanol at 25-30°C without using a solvent. The following conditions must be satisfied: (1) In the reaction, the component ratio must be strictly adhered to. The volume ratio indicated is:  $\text{SiHCl}_3:\text{C}_2\text{H}_5\text{OH}=1:1.75$ .

(2) The water content of the ethanol must be less than 0.2%. (3) The hydrogen chloride formed must be evacuated rapidly from the reaction vessel. This was secured by passing through nitrogen at a rate of 1-1.5 l/min per liter of reacting liquid, by increasing the nitrogen rate to 3-4 l/min when the introduction of components was completed, and by heating to 50°C when the Cl content of the reaction mixture had reached 7%. The flow of nitrogen was stopped when the Cl content dropped below

Card 1/2

Synthesis of triethoxy silane

S/191/62/000/012/007/015  
B101/B186

1%. The product was rectified. Yield 85%. The losses in  $\text{SiH}(\text{OC}_2\text{H}_5)_3$  are due to the entrainment of reaction products in the  $\text{HCl}$  and  $\text{N}_2$  currents ( $\sim 5\%$ ), to side reactions (7-10%) and to rectification losses ( $\sim 1\%$ ). There are 1 figure and 1 table.

Card 2/2

45193

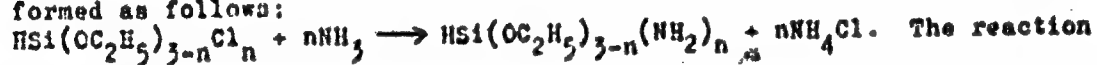
S/191/63/000/001/006/017  
B101/B186AUTHORS: Kleshchevnikova, S. I., Levina, Ye. P., Rumyantseva, Ye. I.

TITLE: Purification of tri- and tetraethoxysilanes from chlorine-containing compounds

PERIODICAL: Plasticheskiye massy, no. 1, 1963, 25-26

TEXT: Chlorine-substituted silanes which readily hydrolyze, reducing the stability of the finished product and corroding the apparatus, are formed as by-products in the synthesis of tri- and tetraethoxysilanes from chlorosilane and ethanol. To eliminate them, it is suggested that bubbling with  $N_2$  which removes most of the resulting HCl should be followed by bubbling with anhydrous  $NH_3$  gas. Triethoxysilane with a chlorine content of 1.2-1.5% was bubbled in a mixer with  $NH_3$ , taking 20-25% more  $NH_3$  than required to bind the Cl. Amino compounds were

formed as follows:



Card 1/2

Purification of tri- and ...

S/191/63/000/001/006/017  
B101/B186

mixture remained in the vessel for 1.5-2 hrs to polymerize the amine precipitate, and was then filtered. The filtrate was fractionated. The fraction boiling at 131-134°C consisted of pure  $\text{HSi}(\text{C}_2\text{H}_5)_3$  and contained neither chlorine nor nitrogen. Commercial tetraethoxysilane containing 0.5% Cl was purified in the same manner.

Card 2/2



L 16294-65 EWT(m)/EPF(c)/EMP(j)/T Pc-4/Pr-4 RM

ACCESSION NR: AP4045842

S/0064/64/000/009/0659/0663

AUTHOR: Reybakh, M. S.; Tsirlin, A. M.; Kleshchevnikova, S. I.

TITLE: Continuous synthesis of triethoxysilane

SOURCE: Khimicheskaya promy'shennost', no. 9, 1964, 659-663

TOPIC TAGS: triethoxysilane, triethoxysilane synthesis, continuous synthesis, trichlorosilane, absolute alcohol, HCl removal, triethoxysilane dissociation, triethoxysilane yield, HCl desorption

ABSTRACT: In the search for higher yields (above the maximum 65%) of the title compound, the influence of technological factors (period of contact of the reaction product with HCl, ratio of starter materials, reaction temperature) upon the yield was examined. The experimental laboratory equipment is figured. Reaction specimens were tested for amount of triethoxysilane, chlorine, HCl, tetraethoxysilane and alcohol. The period of contact was determined at 30C, the amount of the starter materials, i. e.  $\text{HSiCl}_3$  and absolute ethanol was 100 and

Card 1/2

L 16294-65

ACCESSION NR: AP4045842

175 cc in all experiments, the influence of temperature was tested between 30 and 100C. Dissociation of the synthesized triethoxysilane (80% yield) under the influence of HCl was observed as early as one minute after the start of the reaction. Optimal alcohol addition was found at 97-98% of the stoichiometric value, with a 2-3% excess of trichlorosilane, to make up for its possible evaporation. The optimum temperature, 30C was obtained upon mixing the starter materials at 20C. Removal of HCl from the reaction zone is required for high yields, thus necessitates a continuous process which is described for use in the pilot equipment. Its main feature is a film column for HCl desorption, HCl is then removed together with the blown-through nitrogen, thus remains only about 40 seconds in contact with the reaction mixture. Under these conditions the yield was 97%. This process was used with test-manufacturing equipment and yielded 6 kg triethoxysilane in one hour (97% yield). Orig. art. has: 5 figures, 3 tables and 6 formulas

ASSOCIATION: None

SUBMITTED: 00

SUB CODE: GC

ENCL: 00

NO REF SOV: 007

OTHER: 006

Card 2/2

KLESHCHEVNIKOVA, S.I.; DUBROVSKAYA, G.A.; RUMYANTSEVA, Ye.I.

Reaction of triethoxysilane with ethyl alcohol. Plast. massy  
no.3:14-16 '65. (MIRA 18:6)

L 51875-65 ENT(m)/EFF(c)/ENP(j)/I Fc-4/Pr-4 RM  
ACCESSION NR: AP5010549

UR/0064/65/060/004/0015/0017  
661.713.5-932

A. THORS: Raybakh, M. S.; Tsirlin, A. M.; Moshaykina, A. S.; Kleshchevnikova, S. I.

TITLE: A continuous method of producing tetraethoxysilane

SOURCE: Khimicheskaya promyshlennost', no. 4, 1965, 15-17

TOPIC TAGS: tetraethoxysilane, reactor, organic synthesis/NIMD 28 alloy

ABSTRACT: The authors first summarize data from the literature on methods of preparing tetraethoxysilane, and then discuss a method they have studied for the synthesis of the compound, with increased yield of the desired product. A reactor was used, the setup of which is illustrated in Figure 1. Tetraethylchloride and absolute ethyl alcohol are introduced from the vessels (1 and 2) into the mixer (3) which is mounted in the reaction chamber of the film column (5). The column was prepared from NIM-28 alloy and was 1.5 m high. The reaction mixture pours over the lip of the column, uniformly spreading over the inner surface of the column and forming a thin downward-flowing film. A counter current of nitrogen passes through the column from the bottom.

L 51875-65

ACCESSION NR: AP5010549

the reducer (6) and the drier (7), which is filled with zeolite. A heating jacket (8) permits warming of the downward-flowing liquid. From the collecting chamber the product-raw material is ready for rectification. Hydrogen chloride and nitrogen are removed from the column through a reflux condenser. The product is a colorless liquid. Several comparative tests were made, and it is concluded that the proposed method is very promising. The yield of tetraethoxysilane may amount to 10% of the initial silicon tetrachloride, and this method considerably reduces the amount of equipment and the expense of rectification. Orig. art. has: 2 figures, 2 tables, and 2 formulas.

ASSOCIATION: none

SUBMITTED: 00

EXCL: 01

SUB CODE: 00, 00

NO REF SOV: 009

OTHER: 002

Card 2/3

L 1-75-65

ACCESSION NR: APS010549

ENCLOSURE: 01

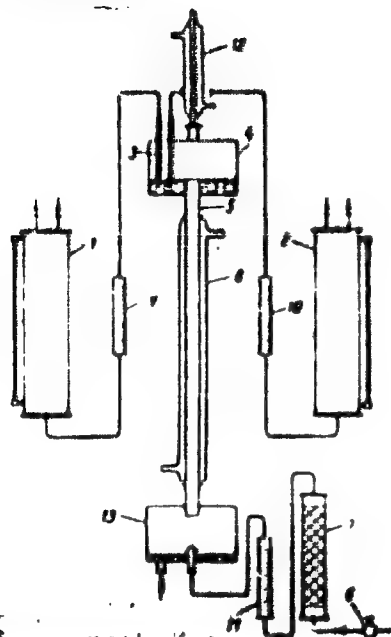


Fig. 1. Pilot setup for synthesis of tetraethoxysilane

- 1- container for silicon tetrachloride; 2- container for absolute ethyl alcohol;
- 3- mixer; 4- reaction chamber;
- 5- film column; 6- reducer;
- 7- drier; 8- jacket;
- 9, 10, 11- float meters;
- 12- reflux condenser;
- 13- collecting chamber

llc  
Card 3/3

NIESHOCHENIKOVA, S.I.; DUBROVSKAYA, G.A.; RUMYANTSEVA, Ye.I.

Study of the reaction of triethoxysilane with hydrogen chloride.  
Plast. massy no.4:21-24 '65. (MIRA 18:6)

REYBAKH, N.S.; TSIRLIN, A.M.; MOZHAYKINA, A.S.; KLESHCHENNIKOVA, S.I.

Continuous method for the production of tetraethoxysilane. Khim.prom.  
41 no.4:15-17 Ap '65. (MIRA 18:8)



L 915/3-67 EWT(m)/EWP(j) RM  
ACC NR: AP6027906

SOURCE CODE: UR/0064/66/000/008/0015/0017

AUTHOR: Kleshchevnikova, S. I.; Dubrovskaya, G. A.; Romyantseva, Ye. I.

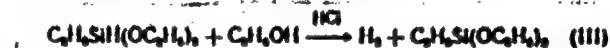
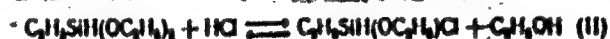
ORG: none

TITLE: Ethyldiethoxysilane synthesis

SOURCE: Khimicheskaya promyshlennost', no. 8, 1966, 15-17

TOPIC TAGS: silane, ethyl alcohol, hydrogen chloride, chlorine, ~~inorganic synthesis~~, ~~reaction rate~~, chemical reaction, hydrochloric acid, equilibrium constant, ~~chemical synthesis~~

ABSTRACT: Ethyldiethoxysilane synthesis and side reactions during the synthesis were studied. The synthesis was effected with ethyldichlorsilane and ethyl alcohol. At a volumetric ratio of  $C_2H_5SiHCl_2 : C_2H_5OH = 1 : 0.98$  the ethyldiethoxysilane yield is ~66%. At a 5% excess of ethyl alcohol the chlorine content of the ethyldiethoxysilane yield decreases to 44.% and at ~2% underweight of alcohol the chlorine content of the ethyldiethoxysilane increases. A decrease in the synthesis temperature from 70-80 C to 50-60 C results in a decrease of ethyldiethoxysilane yield and an increase of its chlorine content. The following three reactions are carried out to ascertain the side reactions during the synthesis:



Cord 1/2

UDC 661.718.5

L 07513-51

ACC NR: AP6027906

No hydrogen is generated in reaction (I) so that without a catalyst the reaction does not proceed. In reaction (II) the ethyldiethoxysilane reacts with the hydrogen chloride forming chlorether and alcohol which disrupts the Si-H bond and produces hydrogen and ethyltriethoxysilane as in reaction (III). Ethyl chloride and water are not produced under these conditions. In reaction (II) the equilibrium constants at 20, 25, 35, and 60 C have practically the same value during the entire experiment. In reaction (III) the velocity constant of the ethyl alcohol and ethyldiethoxysilane reaction at 20 C increases from 0.069 to 0.235 when the dissolved hydrogen chloride content of the thyldiethoxysilane is increased from 0.87 to 4.85%, indicating that hydrogen chloride is the catalyst of the reaction. Orig. art. has: 3 tables and 6 formulas.

SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 001

Card 2/2 LS

EL'KIN, M.A.; KLEBICHEVNIKOVA, V.P.

Extensive resection of the small intestine in volvulus. Vest.  
khir. no.10:115-117 '64. (MIRA 19:1)

1. Iz fakul'tatskoy khirurgicheskoy kliniki (zav. - prof.  
S.V. Geynats [deceased]) Leningradskogo pediatricheskogo medi-  
tsinskogo instituta.

KATS, B.T.; KLESHCHEVNIKOVA, V.P.

Diagnosis and treatment of leiomyoma of the esophagus. Vop. onk.  
7 no.1:3-8 '61. (MIRA 14:2)

(ESOPHAGUS—TUMORS)

KLESHCHEVNIKOVA, Y.P.; KL'KIN, M.A.

Stomach resection in stenosis following burns. Klin.khir, no.9:30-33  
8 '62. (MIRA 1685)

1. Khirurgicheskoye otdeleniye Leningradskoy bol'nitsy imeni  
Kuybysheva i khirurgicheskoye otdeleniye bol'nitsy meditsinskoy  
sanitarnoy chasti zavoda "Bol'shevik."  
(STOMACH--SURGERY) (BURNS AND SCALDS)

KOROTKOVA, T.M.; IVANOV, A.A.; KONDRAT'YEV, A.P.; KLESHCHEVNIKOVA, V.P.

Sergei Vladimirovich Gelnats; obituary. Vest.khir. 83 no.8:155-156  
Ag '59. (MIRA 13:1)  
(GELNATS, SERGEI VLADIMIROVICH, 1898-)

KLESHCHENNIKOVA, V. P.

"Clinical Aspects and Surgical Treatment of Cancer of the Cardiac  
and the Lower Third of the Esophagus." Cand Med Sci, Leningrad  
State Pediatrics Medical Inst, Leningrad, 1955. (KL, No 10, Mar 55)

SO: Sum. No. 670, 29 Sep 55--Survey of Scientific and Technical  
Dissertations Defended at USSR Higher Educational Institutions (15)

EL'KIN, M.A.; KLESHCHEVNIKOVA, V.P. (Leningrad, ul. Parata, d.29, kv.7)

Simultaneous resection of the small intestine and sigmoid in  
volvulus. Vest.khir. no.9:118-121 '61. (MIRA 15:3)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (zav. - prof. S.V.  
Geynata [deceased]) Leningradskogo pediatricheskogo meditsinskogo  
instituta.

(INTESTINES--SURGERY) (INTESTINES--OBSTRUCTIONS)



KLSSHCHEVSKY, S. YA.

Ships—Maintenance and Repair

Improve planning and accounting of ship repair work. Ryb. khoz. 28, no. 4, 1952.

9. Monthly List of Russian Accessions, Library of Congress, AUGUST 1952 1953. Unclassified.

KI ESHEHINOV, M. [A]

20735. Kleshchinov, M. Ukroshcheniye podzemnykh vod. [Primeneniye moshehnykh  
turbinykh nasosov v ugol'nykh shakhtakh]. Ill. S. Vetsrumb. Tekhnika -- molodezhi,  
1949, No. 6, s. 5-6

SO: LETOPIS ZHURNAL STATEY - Vol. 28, Moskva, 1949

SHUKHARDIN, Semen Viktorovich; KLESHCHINOV, M.A., otv.red.; PROKOF'YEVA,  
M.B., red.isd-va; POLYAKOVA, T.V., tekhn.red.

[Fundamentals of the history of technology; development of  
theoretical and methodological problems] Osnovy istorii tekhniki;  
opyt razrabotki teoreticheskikh i metodologicheskikh problem.  
Moskva, Izd-vo Akad.nauk SSSR, 1961. 277 p.

(Technology)

(MIRA 14:2)

SKORKOVSKIY, Ya. [Skorkevsky, J.], inzhener; RZHERZHIKHA, K. [Rericha, K.]  
inzhener; KLESHCHINOV, M.A., gornyy inzhener, [translator].

Czechoslovak 150-ton electric locomotives for strip mining. Gor. zhur.  
no. 5:12-22. My '57. (MIRA 10:6)

1. Zaved in. V.I. Lenina, (g. Pl'sen').  
(Czechoslovakia--Electric locomotives) (Mine railroads)

COUSKA, V., [Houska, Vlastimil, (ag.)]; KLESHCHINOV, M.A., inzh., [translator];;  
PEDIUKIN, V.A., inzh., osv. red.; DMITRIYVA, L.N., red. izd-vo;;  
ALADOVA, Ye.I., tekhn. red.

[Mining operations in quicksand]. Geroye raboty v plyvunakh. Moskva,  
Ugletekhnizdat, 1958. 101 p. [Abridged translation from the Czech].  
(Mining engineering) (MIRA 11:11)

L 21395-66 EWI(m)/ETC(t)/EWG(m)/EWP(t) IJP(g) RDW/D  
 ACC NR: AP6003796 SOURCE CODE: UR/0181/66/003/001/0240/0241

AUTHORS: Inyutkin, A. I.; Kleshchinskiy, L. I.; Sharavskiy, P. V.

ORG: Leningrad Construction-Engineering Institute (Leningradskiy inzhenerno-stroitel'skiy institut)

TITLE: Determination of the near-order parameters in chalcogenide of lead by diffuse scattering of x rays

SOURCE: Fizika tverdogo tela, v. 8, no. 1, 1966, 240-241

TOPIC TAGS: lead compound, x ray scattering, sulfide, telluride, selenide, semiconductor property, x ray diffraction analysis, forbidden band

ABSTRACT: The authors attempted to apply to the measurement of near-order parameters of semiconductor materials procedures initially used for metallic alloys. The materials chosen were chalcogenides of lead  $PdS$ ,  $PdSe$ , and  $PdTe$ . The investigations were made with textureless polycrystals, using diffuse-scattering diffraction patterns.

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L 21395-66

ACO NR: AP6003796

The degree of near order was modified by heat treatment. The parameters themselves were measured by an ionization method using URS-50 apparatus with CuK $\alpha$  radiation. The measurements were made in the range of angles from 4 to 26°. The near-order parameter chosen was the quantity  $\alpha_1 = 1 - P_1^{AB}/C_B$ , where  $i$  is the number of the coordination sphere,  $C_B$  the concentration of atoms of species B, and  $P_1^{AB}$  is the probability that an atom B is located at a distance  $i$  from the atom A. The results show the following: 1. A change in the numerical value of the near-order parameter during the first two hours of annealing can be attributed to the elimination of the deformation damage during the preparation of the samples. Subsequent changes of this parameter must be regarded as changes in the ordering process. 2. Whereas the degree of ordering at the first coordination sphere is the same for all three compounds, it is much higher for PbTe at the second sphere. 3. The change in the near-order parameter as a function of the heat treatment is seen most strongly in PbTe. In the latter, the width of the forbidden gap also increases, and this rather unusual circumstance can be attributed to

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L 21395-66  
ACC NR: AP6003796

an increase in the coupling forces influencing on the degree of ordering of the atoms of PbTe. It is concluded that application of this method to semiconductors yields new data on their properties. Orig. art. has: 1 figure, 1 formula, and 1 table.

SUB CODE: 20/ SUBM DATE: 06Oct64/ ORIG REF: 002/ OTH REF: 005

Card

3/3 u/r



KLESHCHINSKIY, A.Ya., inzhener.

Use of pneumatic operating mechanisms. Elek.sta.27 no.6:60-61 Ja  
'56. (Electric circuit breakers)  
(MIRA 9:9)

KLESHCHINSKIY, A.Ya., inshener.

Operation of 110 kv. air circuit breakers made by the AEG firm.  
Elek.sta. 27 no.7:56 J1 '56.

(MLRA 9:10)

(Electric circuit breakers)

KLESHCHINSKIY, A. Ya., inzhener; KUZ'MIN, Ya. P., inzhener.

Use and impregnation of spruce supports. Elek.sta. 27 no.11:46-48  
N 156. (MIRA 10:1)  
(Wood--Preservation) (Spruce) (Electric lines--Poles)

~~KLESHCHINSKIY, A. Ya., inzhener.~~

Using air compressor assemblies. Blak. sta. 28 no. 1:81-84 Ja '57,  
(Gas turbines) (Air compressors) (MLRA 10:3)

YEFREMOV, I.S., doktor tekhn. nauk; REKITAR, R.A., inzh.;  
 ROZENBERG, S.V., kand. ekon. nauk; ELATNOV, M.D., kand.  
 tekhn. nauk; VIL'KOMETSKIY, M.S., inzh.; TOMILIN, A.I., inzh.;  
 POPELYASH, V.N., inzh.; ZAGAYNOV, N.A., kand. tekhn. nauk;  
 FINKEL'SHTEYN, B.S., inzh.; MARINOV, I.A., inzh.; ISTRATOV, V.P.,  
 inzh.; MARGOLIN, I.S., inzh.; ENGEL'S, G.O., inzh.; ANTONOV,  
 V.A., inzh.; SOKOLOV, V.D., inzh.; KLESHCHINSKIY, B.K., inzh.;  
 IL'INSKIY, A.I., retsenzent; PAPKOV, N.O., retsenzent; SHIRNOV,  
 G.M., retsenzent; SHPOLYANSKIY, M.N., otv. red. тома; VOLOCHNEV,  
 V.N., red.; TROFIMOV, A.N., red.; RACHEVSKAYA, M.I., red. izd-va;  
 LEKLYUKHIN, A.A., tekhn. red.

[Technical manual on city electric transportation in three  
 volumes] Tekhnicheskii spravochnik po gorodskomu elektro-  
 transportu v trekh tomakh. Redkollegiya: V.N.Volochnev, A.N.  
 Trofimov, M.N.Shpolianskii. Moskva, Izd-vo M-va kommun. khos.  
 RSFSR. V.1.1. [City electric transportation (general part)]  
 Gorodskoi elektricheskii transport (obshchaya chast'). Otv.  
 red. тома M.N.Shpolianskii. 1961. 726 p. (MIRA 15:4)  
 (Streetcars) (Trolley buses)

NIKOLAYEV, M.I.; KLESHCHINSKIY, B.K.; OVCHINNIKOVA, V.V., red. izd-va;  
KHENOKH, P.M., tekhn. red.

[Centralized traffic control and communication devices in  
municipal electrified transportation] Ustroistva signalizatsii,  
tsentralizatsii, blokirovki i svyazi na gorodskom elektro-  
transporte. Moskva, Izd-vo M-va kommun.khoz.RSFSR, 1962. 177 p.  
(MIRA 15:5)

(Local transit—Electronic equipment)  
(Electronic traffic controls)

ACCESSION NR: AR5005456

S 127 4 11 1 B 1 R 1

127 4 11 1 B 1 R 1

127 4 11 1 B 1 R 1

A. P. Klenchinskii, L. I. Khabarov, E. N. Sheravskiy, P. V.

TITLE: Determining the solid-solution limit in InAsCdTe

CITED SOURCE: Sb. Fizika. Dokl. na 22 Nauchn. konferentsii. Leningr. inzh.-  
stroit. in-t, L., 1964, 12-15

TOPIC TAGS: solid solution, InAsCdTe solid solution

TRANSLATION: A complex investigation of InAs-CdTe solid solutions was conducted for determining the limit of CdTe solubility; the investigation was intended for verifying the assumption that the cause of limited solubility of CdTe in InAs and the degree of dissociation of CdTe due to the dissociability of the solid solution medium. Specimens of ten compositions, ranging from 1% to 99% CdTe, were prepared from semiconductor-purity materials. Microstructure, microhardness, and x-ray diffraction studies revealed that the limit of solubility of CdTe in InAs was approximately at 20% CdTe. Bibliography: 4 titles.

SUB CODE: 88

Card 1/1

ENCL: 00





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0.2

**Attempts to cure neurons by external inhibition.** S. Kleschnov (Acad. Sci. USSR, 1967, 44, 1000000). During the observation of a protective conditioned reflex in a dog compulsive movements of the hind posterior legs were noted during the intervals between stimulations. These movements persisted for some period after the experiments. They were unaffected by anesthesia and were still present after a new conditioning was conducted. The application of an anesthetic solution (a hand rubbing action) at the onset of the movements was followed by a temporary disappearance of the compulsive movements during 2-4 months. The inhibitory effect was considerably weakened during rest. Administration of caffeine caused recurrence of the "neurosis." T. T.

ASB-36A METALLURGICAL LITERATURE CLASSIFICATION

OCT 1967

KLISHCHOV, S. V.

Kleshchov, S. V. - "The effect of the combined use of various pharmacological substances on the conditioned-reflex activity of dogs," Trudy fiziol. laboratoriy im. Pavlova, Vol. XV, 1949, p. 361-63

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

Kleshechov, S. V.

Kleshechov, S. V. - "The effect of acute blood losses on the highest nervous activity,"  
Trudy fiziol. laboratoriy im. Pavlova, Vol. XV, 1949, p. 361-63

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

KLESHCHOV, S. V.

Kleshchov, S. V. - "Profound damage to the highest nervous function of a dog (experimental psychosis) after repeated reactions of toxic doses of camphor," Trudy fiziol. laboratorii im. Pavlova, Vol. XV, 1949, p. 386-93

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

KLESHCHOV, Y.S. (Chernigov)

Using the magnetophone in schools. Vis.v shkole 16 no.4:93-94  
Jl-Ag '56. (MIRA 9:9)

1.1-ya srednyaya shkola,  
(Schools--Exercises and recreations)

~~see KLESCHOV~~  
KLESCHOV, V.V. [Klieshchov, V.V.]

Abstract of R.I. Van Nice's (USA) thesis "Study of optimum strategies  
for extremum adaptation." Avtomatyka no. 1:71-93 '61.

(Automatic control) (Van Nice, R.I.)

(MIRA 14:4)

KLESHCHOV, V.V. [Kleshchov, V.V.]

Work of American scientists in the field of automatic control  
(from the materials of the Fifth Joint Conference on Automatic  
Control held in the U.S.A. in 1964). Avtomatyka 9 no.6:78-84 '64.  
(MIRA 18:1)

KLEMECHOVA, N.K.; AYRAPET'YANTS, N.Sh, redaktor; TARASOV, O.A., redaktor;  
SMIRNOVA, A.V., tekhnicheskij redaktor.

[Bibliography on conditioned reflexes] Bibliografiia po uslovnym  
refleksam. Pod red. N. Sh. Airapet'ianca. Moskva, Izd-vo Akademii  
nauk SSSR, Vol.1, 1901-1936 gg. 1955. 254 p. (MLA 8:6)  
(Bibliography--Conditioned response)



FRENKEL, A.

"Bibliography on conditioned reflexes" N.K. Kleshchova. Reviewed by  
A. Frenkel. Zh. vys. nerv. deiat. 5 no.6:927-929 M-D '35. (MLRA 9:3)

(BIBLIOGRAPHY--CONDITIONED RESPONSE) (KLESHCHOVA, N.K.)

Kleshchuk, N. S. and Pustovalov, M. H. - "Treatment of lung hemorrhages by internal introduction of hemolyzed blood," Trudy Omskogo med. in-ta im. Kalinina, No. 10, 1948, p. 155-61

SO: U-3600, 10 July 53, (Letopis 'Zhurnal 'Niykh Statey, No. 6, 1949).

29632

S/142/61/004/003/015/016  
E192/E382

9.2585 (1144)

AUTHOR: Kleshchuk, V.G.

TITLE: Some synchronisation characteristics of klystrons  
and magnetrons operating with a long line

PERIODICAL: Izvestiya vysshikh uchebnykh zavedaniy,  
Radiotekhnika, v. 4, no. 3, 1961, pp.348 - 351

TEXT: The equivalent circuit of an oscillator loaded with  
a long line can be represented by means of two tuned coupled  
circuits, the first of which represents the resonant system of  
the oscillator, while the second circuit represents the  
transmission line at the resonant frequency. The circuit is  
therefore valid if only one unstable region is considered.  
The physical picture of the behaviour of the system in the  
non-stable region is analogous to the phenomena occurring in  
systems with two degrees of freedom. It should be possible,  
therefore, to extend some of the results of the synchronisation  
theory of the systems with two degrees of freedom to an  
oscillator loaded with a long line. It is known that in such  
systems two synchronisation regions are observed (Ref. 1 -

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S/142/61/004/003/015/016

Some synchronisation characteristics. E192/E382

I.L. Bershteyn and Ye.I. Ikonnikov - ZhTF, 1954, 4, 172;  
 Ref. 2 - A.M. Shauman and P.M. Zanadvorov - IVUZ, Radiofizika,  
 1959, 2, no. 2, 267). In the following, some results of  
 experimental investigation of this problem for a klystron and  
 a magnetron are reported. The block diagram of the experimental  
 equipment is shown in Fig. 1. A 10-cm klystron was used and  
 its resonator was modulated by means of rectangular pulses  
 having a duration of  $\tau = 1.2$  ns and a repetition frequency  
 $F = 1\ 000$  p.p.s. The external synchronising signal was provided  
 by a standard generator, type ГС-22 (GS-22). Since in pulse  
 operation synchronisation is possible only in those cases when  
 the pulses of the synchronised and the synchronising oscillators  
 are shifted in time, triggering of the modulators of both the  
 generators was performed by a delayed pulse generator, type  
 ГЧС-2 (GIS-2) (4 in Fig. 1). A system of attenuators 5 was  
 used in order to eliminate any coupling between the klystron  
 and the external generator. The external signal was applied  
 to the system through a coaxial T-junction 6. The length of  
 the transmission line 7 was 5 m. The mismatching of the line

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8/142/61/004/003/015/016

Some synchronisation characteristics...E192/E382

preceding the power meter 8 was achieved by employing a reactive rod 9. By shifting this rod it was possible to change the modulus and the phase of the reflection coefficient of the load. Adjustment of the system was effected by tuning the plungers 10. The envelopes of the high-frequency pulses of the generators were observed by means of an oscillograph 11; the spectrum of the oscillations and the measurement of the synchronisation bandwidth were performed by means of a spectrum analyser 12. From the measurements on the klystron it was found that as the frequency  $f_{BC}$  of the external source was nearing one of the klystron frequencies, for instance  $f_1$ , a partial pull-in of  $f_1$  by  $f_{BC}$  was observed and as the signal was increased  $f_1$  was replaced by  $f_{BC}$ ; the frequency  $f_2$  then entirely disappeared and a complete synchronisation was achieved. During further changing of the external frequency, the klystron frequency followed  $f_{BC}$ . The envelope and the form of the spectrum for this case are shown in a figure.

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Some synchronisation characteristics. E192/E382

When the power of the external signal was reduced, beats were observed inside the synchronisation bandwidth and finally two synchronisation regions could be seen which corresponded to the two frequencies  $f_1$  and  $f_2$ . From these experiments, it is concluded that the presence of a long line results in a successive synchronisation at the two frequencies but, depending on the power of the synchronising signal, an overlapping of the two synchronisation regions is possible. In this case, only one frequency is generated in the unstable region, which means that the system operates at the frequency of the external signal and the long-line effect is entirely eliminated. Similar results were obtained for a magnetron. In particular, the relationship between the power of the external source and the magnetron at which the long-line effect disappears was investigated and the results are shown in Fig. 5. This illustrates the synchronisation bandwidth of the magnetron as a function of the ratio of the power  $P_{ABT}$  of the synchronised generator to the power  $P_{BC}$  of the external signal. Curve I of Fig. 5 was taken for the

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<sup>29612</sup>  
S/142/61/004/003/015/016

Some synchronisation characteristics ... E192/E382

case of the absence of a frequency discontinuity, while Curve II is for the case of the frequency jump of 12 Mc/s. From the first curve it is seen that the bandwidth can be increased by increasing the power of the external signal, while the second curve indicates that at a suitable value of the power ratio the synchronisation bandwidth is approximately equal to the magnitude of the frequency discontinuity.

There are 5 figures and 2 Soviet-bloc references.

ASSOCIATION: Laboratoriya elektroniki Sibirskogo fiziko-  
tekhnicheskogo NII pri Tomskom gos. universitete  
im. V.V. Kuybysheva (Electronics Laboratory of  
the Siberian Physicotechnical NII of Tomsk State  
University im. V.V. Kuybyshev)

SUBMITTED: July 27, 1960

4

Card 5/5

KLISHCHUNOV, P.P., konstruktor, starchyy nauchnyy sotrudnik

[KD-2 oxygen compressor; operating instructions] Kislorodnyi  
doshimaniushchii kompressor KD-2; instruktsiya po ekspluatatsii.  
Moskva, Gos.nauchno-tekhn.isd-vo lit. po gornomu delu, 1960.  
19 p. (MIRA 14:12)

1. Tsentral'naya nauchno-issledovatel'skaya laboratoriya  
Tsentral'noy voyenisirovannoy gornospasatel'noy stantsii.  
(Air compressors)



SHUL'GIN, I.A.; KLESHIN, A.F.; RZHANOVA, T.B.; KHAZANOV, V.S.

Brightness of differently oriented leaves. Nauch. dokl. vys.  
shkoly; biol. nauki no.3:150-156 '63. (MIRA 16:9)

1. Rekomendovana Institutom fiziologii rasteniy im. K.A.Timiryazeva  
AN SSSR, kafedroy darvinizma Moskovskogo gosudarstvennogo  
universiteta im. M.V.Lomonosova i Vsesoyuznym nauchno-issledova-  
tel'skim svetotekhnicheskim institutom.

(Leaves--Optical properties)

KLESHKAN', G.A. (Ravno, ul. Stalina, d.199)

Some results of surgery in Rovno Province during 20 years of  
Soviet rule and prospective improvement of surgical care in  
this province. Nov. khir. arkh. no.2:107-111 M-r-Ap '60.

(MIRA 14:11)

1. Glavnyy khirurg Rovenskogo oblastnogo otdela zdavookhraneniya.  
(ROVNO PROVINCE--SURGERY)

BOROVYY, Ye.M. (Rovno, ul. Leninskaya, d.3, kv.21); VEL'SKIY, V.M.;  
KLESHKAN', G.A.

Some problems of training surgical personnel in Rovno Province.  
Klin.khir. no.9:63-65 § '62. (MIRA 16:5)

1. Khirurgicheskoye otdeleniye (sav. - Ye.M. Borovyy) Rovn-  
skoy oblastnoy bol'nitsy.  
(ROVNO PROVINCE—SURGERY—STUDY AND TEACHING)

S/118/61/000/002/005/007  
A161/A126

**AUTHOR:** Kleshko, O.B., Engineer

**TITLE:** Photoelectric micrometer wire gage for continuous diameter measurement in the drawing process

**PERIODICAL:** Mekhanizatsiya i avtomatizatsiya proizvodstva, no. 2, 1961, 37-39

**TEXT:** Design and operation is described in detail of a new photoelectric wire gage developed in the Tsentral'naya laboratoriya avtomatiki (Central Automation Laboratory) of the Ministry of Construction RSFSR. The principle is explained by a diagram (Fig. 1): The filament of an electric light bulb (1) is in the focus of a lens (2) that transforms the bulb light beam into a parallel beam directed on a diaphragm (4) with two apertures of equal width, but different height (Fig. 1b and 1c). The diaphragm splits the beam into I and II. A plate (3) in front of the diaphragm is oscillating horizontally with 50 cps frequency and produces an outphase modulation of the beams. This plate (3) is oscillated by an electromagnetic oscillator (15), and the amplitude is such that the aperture in the diaphragm (4) is not fully closed. The wire (5) moves on guide rollers (16) preventing its shifting. It runs in the way of the beam II, and a

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Photoelectric micrometer wire gage ...

S/118/61/000/002/005/007  
A161/A126

gate (11) closes the way partly and is moved by an asynchronous two-phase motor (10). The rotary armature motion of this motor is transformed into a straight motion of the gate by a micrometer screw (12) bearing a scale graduated in microns. A hand (14) indicates on this scale the diameter of the wire. Another lens (6) joins the beams I and II again on the cathode of a photocell (8) where they are compared (subtracted) and the difference transformed into a-c voltage (mismatch voltage). A frosted glass (7) dissipates the beams over the whole cathode. The a-c voltage from the photocell is amplified by an electronic amplifier of low frequency (9) and fed to the motor (10) control winding. A capacitor on the amplifier input serves as a filter for the constant component. The polarity of the control winding makes the mismatch voltage move the gate to even out the beams I and II. The system operation is explained in detail. The entire set consists of a primary pickup, an electronic unit, and a secondary indicator. The pickup is installed on a special stand near the drawing mill, and the electronic unit and the indicator may be placed at any convenient place in 5-10 m distance from the pickup. The indicator has two scales - in millimeters and in microns. The reading transmission system includes two selsyns. The gage has been tested in shop operation where it worked with an error of not more than  $\pm 5 \mu$  on wires with diameter of 100  $\mu$  to 2 mm. It is also suitable for checking the

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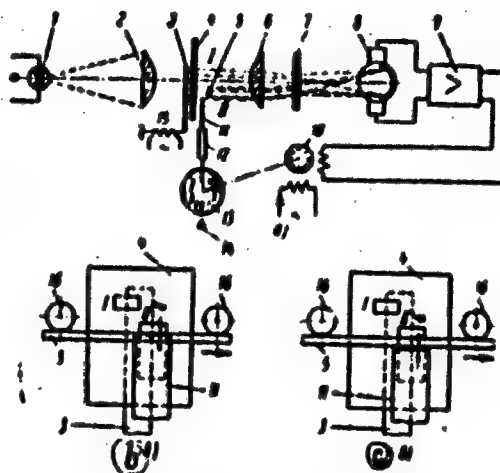
8/118/61/006/002/005/007  
A161/A126

Photoelectric micrometer wire gage ...

wire ovality, or for measuring the cross section of flat watch springs, thread and electric wire insulation. It may be used in automatic control systems. There are 3 figures.

Fig. 1:

Photoelectric micrometer wire gage



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S/118/62/000/001/004/005  
D221/D301

AUTHOR: Kleshko, O.B., Engineer

TITLE: Automatic control of strip thickness in reversible cold rolling mills

PERIODICAL: Mekhanizatsiya i avtomatizatsiya proizvodstva, no. 1, 1962, 24-29

TEXT: The Tsentral'naya laboratoriya avtomatiki (Central Laboratory of Automation) (TsLA) has developed a system of automatic control (SAR) which ensures high accuracy of strip thickness. Its feature is the indirect measuring of thickness by the clearance of rolls, using the mill itself as a sort of micrometer. This is expressed by

$\Delta h = S_0 + \frac{F}{H} - h_0$ , where  $S_0$  is the clearance set without the strip,  $F$  is the pressure due to rolling,  $H$  the modulus of elasticity of the mill stand,  $h_0$  the nominal thickness of the strip, and  $h$  the deviation from this value. A diagram of SAR is given, with a detailed description. The

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Automatic control of strip ...

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D221/D301

system incorporates auxiliary circuits for compensating inherent errors of measurement. One error is due to the speed depending on the oil film in the bearings of rolls. The second is produced by the temperature effect on the diameter of rolls. The third error is due to the assumption of linear stress strain characteristic of the mill stand. The first is compensated by feeding a speed proportional signal to the adding electronic potentiometer. A special loop including micrometers, a pulse generator and an integrating amplifier, corrects the second and third errors. The last two items form a filter with a controlled passband. It reduces the band width at lower speeds of the mill and increases it at higher speeds. A special arrangement is provided for resetting the transducers measuring the height screw displacements which incorporates a tracer system. TsLA has developed high accuracy transducer for the above. All these are illustrated and described in detail. The accuracy of the latter is due to the negative feedback provided by a tachogenerator and the non-linear converter. Automatic control of strip thickness was introduced in cooperation with the Leningradskiy stateprokatnyy zavod (Leningrad Steel Rolling Plant) on a four-high cold rolling mill. The


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drive for the mill is ensured by d.c. motors. The field excitation coils of motors actuating the height screws have an independent current supply. The maximum speed of rolling is 4 m/sec. The recordings of thickness were obtained for hand control and for automatic control; greater regularity appears in the latter case. For more accurate comparison of results a special device measured the total length of strip, as well as the length of strip which indicated deviations from the allowed limits. In the instance of hand control the deviation amounted to 35%, whereas the automatic operation indicated only 19%. There are 3 factors.



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KLESHKO, O.B., inzh.

Automatic control of strip thickness on four-high reversing  
mills for cold-rolling. Biul. TSIICHM no. 3:6-10 '61. (MIRA 14:12)  
(Rolling mills)  
(Thickness measurement)  
(Automatic control)

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Automatic control of strip thickness on reversing cold-rolling  
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(Rolling mills)  
(Electronic control)

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D201/D308

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**TEXT:**

A description is given of the design and analysis of automatic control of the continuous hot rolling process of a thin strip, as carried out at the rolling mill '2500' of the Magnitogorskiy metallurgicheskiy kombinat (Magnitogorsk Metallurgical Combine). The mill has 4 coarse and 6 finishing cages, with 700 and 1400 mm diameter of working and supporting rolls respectively. The thickness of rolled strips is 1.5 to 10 mm, its width is 1000 to 2350 mm. The output velocity of the strip is 12 m/sec. The method of automatic control was developed at the Tsentral'naya laboratoriya avtomatiki (TsLA) (Central Laboratory of Automation). The basic elements of the control system are the controllers of the roller gaps, placed

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